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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,183	12/31/2003	Atsushi Umeda	111969.01	5575
25944	7590	05/27/2005	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			PHAM, LEDA T	
			ART UNIT	PAPER NUMBER
			2834	

DATE MAILED: 05/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

Office Action Summary

Application No.

10/748,183

Applicant(s)

UMEDA, ATSUSHI

Examiner

Leda T. Pham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4,5 and 13-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4,5 and 13-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. This office action is in response to amendment filed on 3/2/05.
2. Claims 4 – 5, 13 – 17 are presented for examination. Claims 1 – 3, 6 – 12 are canceled.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. The term "widely spaced apart" in claim 14 is a relative term which renders the claim indefinite. The term "widely spaced apart" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. How far between two junctions can be widely spaced apart? Applicant should give the range, or the distance space between junctions in the specification to define the widely spaced apart term.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 5, 13, 15 – 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liang et al (U.S. Patent No. 6,570,289 B1) in view of Kawai et al. (U.S. Patent No. 5,691,590).

Referring to claim 5, Liang teaches a rotary electric machine comprising:

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a cylindrical stator core (figure 3); and

a pair of armature windings mounted in said stator core (300); and

a three-phase rectifier units, wherein:

each said armature winding has a first group of Δ -connected three-phase windings having three junctions that are $2\pi/3$ in electric angle different from each other and a second group of three phase-windings having three output ends that are $2\pi/3$ in electric angle different from each other and three input ends respectively connected in series to said junctions of said first group, and said three output ends are connected to rectifier unit (figure 5). However, Liang does not teach the rectifier unit is a pair of rectifiers.

Kawai teaches a rotary electric machine having a pair of three phase rectifier units (rectifier 23, figure 4, 5). It is well known in the art for teaching each rectifier serving a function of each of sub-three phase winding (6a – 6f).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a pair of rectifier units in a rotary electric machine for a pair of armature windings as taught by Kawai. Doing so would separate each function of each sub-three phase winding in a rotary electric machine. As teaching in figure 6 and figure 7, only one rectifier 23 is used for stator windings 6 but it does not change the function of reducing the magnetic noise in the alternator as teaching in figure 4, and figure 5. Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include one more rectifier unit in the alternator, so that it can separately rectify the function of each corresponding sub-three phase winding. The reason is it has been held that mere duplication of

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the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. vs. Bemis Co.*, 193 USPQ 8.

Referring to claim 13, Kawai teaches a rotary electric machine including a cylindrical stator core having an axial end surface, an armature winding mounted in said stator core and a pair of three-phase rectifier units (figure 1), wherein:

said armature winding (6) having a pair of three-phase sub-armature windings (6a – 6c, 6d – 6f) and six output terminals respectively connected to said three-phase rectifiers (23, figure 4 – 5); and said pair of three-phase sub-armature windings is disposed in said stator core so that said six output terminals are different in electric angle from each other.

However, Kawai does not teach each of said sub-armature windings comprises a first group of Δ -connected three-phase windings having junctions that are different in electric angle from each other and a second group of three-phase windings having output ends that are different in electric angle from each other and are connected to one of said rectifier units and input ends respectively connected in series to said junctions of said first group.

Liang teaches a low noise automotive alternator having an armature winding with a pair of sub-armature windings, each of said sub-armature windings comprises a first group of Δ -connected three-phase windings having junctions that are different in electric angle from each other and a second group of three-phase windings having output ends that are different in electric angle from each other and are connected to one of said rectifier units and input ends respectively connected in series to said junctions of said first group (figure 5) for reducing magnetic harmonic fluxes in the alternator.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kawai's armature winding with a pair of sub-armature winding as taught by Liang. Doing so would reduce magnetic harmonic fluxes in the alternator, and therefore the magnetic noise is reduced.

Referring to claim 15, Liang teaches the rotary electric machine wherein each of said three-phase windings of said first and second groups is mounted in said stator core so that the phase of current flowing in one phase winding is $\pi/6$ radian in electric angle different from the phase of current flowing in another phase-winding mounted adjacent thereto (line 20 – 25, column 5).

Referring to claim 16, Liang teaches the rotary electric machine wherein each of said phase-windings has approximately the same number of turns (phase A1 has the same number of turns to phase B1, C1).

2. Claims 4, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Liang and Kawai as applied to claim 13 above, and further in view of Umeda et al. (U.S. Patent No 5,982,068).

Referring to claim 4, the combination of Liang and Kawai substantially teaches the claimed invention, except for the added limitation of each stator slot accommodates four conductor segments.

Umeda teaches a stator arrangement of alternator for vehicle having stator core with a plurality of slots where each of slot accommodates four conductor segments (figure 2) for providing a small number of annular windings in a slot to make the manufacturing steps of the stator easier and the production cost lower.

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Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the stator slot having four conductor segments as taught by Umeda. Doing so would make the manufacturing steps of the stator easier and the production cost lower.

Referring to claim 17, Umeda teaches the rotary electric machine wherein said armature winding comprises a plurality of electric conductors welded together (figure 3).

3. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Liang and Kawai as applied to claim 13 above, and further in view of Kusase et al. (U.S. Patent No. 5,122,705).

Referring to claim 14, the combination of Liang and Kawai substantially teaches the claimed invention, except for the added limitation of the junctions are widely spaced apart from each other.

Kusase teaches an alternator having stator winding and junctions (N, M, N', M') wherein junctions are widely spaced apart from each other (figure 11) for reducing leakage magnetic flux in the alternator.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the junctions of the rotary electric machine as taught by Kusase. Doing so would reduce leakage magnetic flux in the alternator.

Response to Arguments

4. Applicant's arguments with respect to claim 3/2/05 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leda T. Pham whose telephone number is (571) 272-2032. The examiner can normally be reached on M-F (8:30-6:00) first Friday Off.

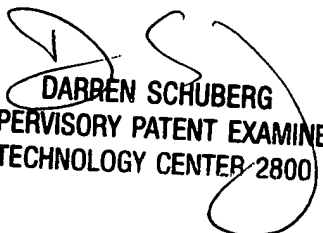
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571) 272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Leda T. Pham
Examiner
Art Unit 2834

LTP
May 16, 2005


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